

REMARKS

INTRODUCTION:

In accordance with the foregoing, claims 9 and 11 have been amended and claims 15-25 are hereby added. No new matter is being presented. Claims 1-25 are pending and under consideration. Reconsideration is respectfully requested.

PRELIMINARY AMENDMENT FILED WITH ORIGINAL APPLICATION:

Applicants respectfully note that this application was accompanied with a preliminary amendment when originally filed. The preliminary amendment affected claims 7-14. Specifically, claims 7-14 were amended from being dependent upon both claims 1 and 4 (multiple dependency) to being dependent upon claim 1. The Applicants have not received any indication that the preliminary amendment was not entered. Thus, the Applicants have treated the preliminary amendment as being entered for purposes of this response.

REJECTION UNDER 35 U.S.C. §102:

In the Office Action, at page 2, numbered paragraph 1, claim 1 was rejected under 35 U.S.C. §102(e) in view of U.S. Patent No. 6,463,352 issued to Tadokoro et al. This rejection is traversed and reconsideration is requested.

Tadokoro is cited for teaching means for updating and obtaining a moving variable threshold. The Applicants respectfully disagree. Claim 1 recites

means for updating and obtaining a moving variable threshold
based on the load state value calculated in a machining cycle
before the current machining cycle.

Tadokoro does not teach updating and obtaining a moving variable threshold. Rather, Tadokoro is directed to a system for managing a plurality of cutting machines. While Tadokoro does mention storing a total machine run time as a threshold value (and in the section cited by the Examiner, edit fields for changing the threshold value), Tadokoro does not teach updating and obtaining a threshold that is variable and that is based on a load state value calculated in a machining cycle before the current machining cycle.

Tadokoro is also cited for teaching means for comparing a load state value with the moving variable threshold. The Applicants respectfully disagree. Claim 1 recites

means for comparing the load state value in the current machining cycle with the moving variable threshold to determine an abnormal condition of the tool

Tadokoro does not teach comparing these two values. As discussed above, Tadokoro does not teach updating and obtaining a threshold that is variable and that is based on a load state value calculated in a machining cycle before the current machining cycle. Therefore, Tadokoro cannot be relied upon to teach comparing the moving variable threshold with a load state value.

The Applicants respectfully submit that since Tadokoro fails to teach or suggest all of the features of claim 1, claim 1 is allowable over Tadokoro. Thus, withdrawal of the §102(e) rejection is respectfully requested.

ALLOWABLE SUBJECT MATTER:

Applicants acknowledge with appreciation that claims 2, 3, 7, 8, 9, 10, 11, 12, 13 and 14 have been found to contain allowable subject matter. However, because claim 1 is believed to be allowable, it is requested that claims 2, 3, 7, 8, 9, 10, 11, 12, 13 and 14 be found allowable as is.

Applicants acknowledge with appreciation that claims 4-6 have been allowed.

NEW CLAIMS 15-25:

The Examiner indicated the allowance of claims 7-14 when those claims were considered dependent upon claim 4. As noted above, claims 7-14 were amended (in a preliminary amendment) from being dependent upon both claims 1 and 4 (multiple dependency) to being dependent only upon claim 1. New claims 15-22 are directed to the subject matter of claims 7-14, respectively, and are dependent upon independent claim 4. Therefore, it is submitted that claims 15-22 patentably distinguish over the prior art.

New claim 23 is directed to a method to determine a condition of a tool used in a machine tool. The method includes

updating a moving variable threshold... and comparing the load state value in the current machining cycle with the moving variable threshold to determine a condition of the tool.

Therefore, it is submitted that claim 15 patentably distinguishes over the prior art.

New claim 24 depends from independent claim 23 and includes all of the features of

claim 23 plus additional features which are not taught or suggested by the prior art. Therefore, it is submitted that claim 16 also patentably distinguishes over the prior art.

New claim 25 is directed to an apparatus to determine a condition of a tool used in a machine tool. The apparatus comprises

a threshold calculator to update a moving variable threshold based on the load state value calculated in a machining cycle before the current machining cycle; and

an analyzer to compare the load state value in the current machining cycle with the moving variable threshold to determine a condition of the tool.

Therefore, it is submitted that claim 25 patentably distinguishes over the prior art.

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot. And further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

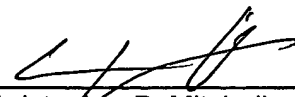
If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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